

WHAT IS CLAIMED IS:

1. A method for processing requests for information in an electronic invoice presentment and payment system including at least a requesting entity and a server system interconnected by a network, the method comprising:

receiving a request configured in a first format at the server system, wherein the request includes a tag that indicates a response format associated with the requesting entity;

generating a response associated with the request;

transforming the response to the response format based on the tag; and

making the transformed response available to the requesting entity.

2. The method of claim 1, wherein the first format and the response format are identical.

3. The method of claim 2, wherein the request was initiated by the requesting entity through the network.

4. The method of claim 1, wherein the tag indicates a type of XSL conversion and transforming the format of the response comprises:

using the type of XSL conversion indicated in the tag to convert the response to the first format.

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5. The method of claim 1, wherein receiving a request comprises:
making request types available to the requesting entity;
receiving a selection of a request type from the requesting entity; and
generating the request configured in the first format based on the selection and the
requesting entity.

6. The method of claim 1, wherein receiving a request comprises:
determining whether the request is in XML format; and
converting the request to a particular XML format in the event the request is not in XML
format.

7. The method of claim 6, wherein the particular XML format is based on a type of
the request.

8. The method of claim 7, wherein the requesting entity is associated a user and the
type of the request includes at least one of a request for billing summary information, a request
for authorization of the user, a request for user account information, a request to make a payment
associated with an invoice, a request to view user profile information, and a request to edit user
profile information.

9. The method of claim 1, wherein generating a response comprises:
requesting information from a process operated by the server system based on the
request;

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receiving the information from the process; and
generating the response based on the information in XML format.

10. The method of claim 9, wherein transforming the format of the response comprises:

transforming the response from the XML format to the first format based on the analysis.

11. A method for processing a response message associated with a request message corresponding to a requesting entity in an electronic invoice presentment and payment system, comprising:

receiving a response message in a first format;

converting the response message to a second format based on an indicator included in the request message; and

sending the converted response message to the requesting entity such that the second format is the same format as that of the request message.

12. The method of claim 11, wherein the indicator identifies a type of XSL conversion that is to be applied to the response message.

13. The method of claim 11, wherein the request message is formatted in XML and the indicator is a tag embedded in the request message.

14. The method of claim 13, wherein the requesting entity initiates the request message by accessing a resource through a request formatted in the second format.

15. The method of claim 13, wherein the requesting entity initiated the request message by accessing a resource in the second format, and wherein the second format is not formatted in XML.

16. An electronic invoice presentment and payment system for processing request messages, comprising:

a requesting entity for generating a first request in a first format;

a web server for receiving the first request and generating a first request message in a second format based on the first request; and

a servlet for receiving the first request message, determining a format for a response message based on an indicator included in the first request message, validating the first request message, requesting data from a server process based on the first request message, receiving response data from the server process, converting the response data into a response message in the second format; transforming the response message to the first format based on the determined format for the response message.

17. The system of claim 16, wherein the servlet operates within a billing manager configured to manage electronic invoice presentment and payment operations associated with the requesting entity.

18. The system of claim 16, wherein the first format is one of XML, HTML and WML and the second format is XML.

19. The system of claim 16, wherein the servlet includes a WML servlet for receiving request messages in WML format, converting received WML formatted request messages to XML format, and sending the converted XML format request messages to an XML servlet included within the servlet.

20. The system of claim 16, wherein the web server sends the first request message to a WML servlet operating within the servlet when the first format is WML, and sends the first request message to a XML servlet, also operating within the servlet, when the first format is one of XML and HTML.

21. The system of claim 16, wherein the second format is XML and the indicator is a transformation tag included within the request message.

22. The system of claim 21, wherein the transformation tag indicates a type of XSL conversion to be applied to the response message based on the first format of the first request, and wherein the servlet transforms the response message to the first format based on the transformation tag.

23. A servlet associated with an electronic invoice presentment and payment server for processing request messages corresponding to a requesting entity, comprising:

a listener for receiving a request message in a first format and validating the request message based on the first format;

a parser for parsing the validated request message;

a dispatcher for providing the parsed request message to a server process based on a type of the request message;

a response handler for receiving response data associated with the request message and converting the response data into a response message; and

a transformer for determining a response format for the response message based on an indicator included in the request message and converting the response message to the response format based on the determination.

24. The servlet of claim 23, wherein the first format is XML and the listener validates the XML request message against a DTD.

25. The servlet of claim 23, wherein the first format is XML and the indicator is a tag included within the XML request message.

26. The servlet of claim 25, wherein the tag indicates a type of XSL conversion to be applied to the response message and the transformer converts the response message to the response format based on the tag.

27. The servlet of claim 26, wherein the response format is a format associated with the requesting entity that initiated the request message.

28. A method for processing request messages corresponding to a requesting entity, the method performed by a servlet operating within an electronic invoice presentment and payment server comprising:

receiving a request message in a first format;

validating the request message based on the first format;

parsing the validated request message;

providing the parsed request message to a server process based on a type of the request message;

receiving response data associated with the request message and converting the response data into a response message;

determining a response format for the response message based on an indicator included in the request message; and

converting the response message to the response format based on the determination.

29. The method of claim 28, wherein the first format is XML and validating the request message comprises:

validating the XML request message against a DTD.

30. The method of claim 28, wherein the first format is XML and the indicator is a tag included within the XML request message.

31. The method of claim 30, wherein the tag indicates a type of XSL conversion to be applied to the response message and converting the response message comprises:

converting the response message to the response format based on the tag.

32. The method of claim 30, wherein the response format is a format associated with a requesting entity that initiated the request message.

33. A system for processing request messages in an electronic invoice presentment and payment system including a requesting entity and a server interconnected by a network, comprising:

a processor; and

a memory containing instructions executable by the processor to:

receive a request message in a first format, wherein the request message includes an indicator that identifies a response format for a response message associated with the request message;

determine a type of request based on the request message;

direct the request to a billing manager process based on the determination;

receive response data from the billing manager process;

convert the response data to a response message in the first format; and

transform the response message to the response format based on the indicator.

34. A system for processing request messages in an electronic invoice presentment and payment system including a requesting entity that requests invoice data from a remotely located server, comprising:

a first process for receiving a request from the requesting entity for billing management information associated with the requesting entity, and generating a request message including a tag that identifies a response message format;

a second process for utilizing the tag to transform a response message created based on the request message to the response message format; and

a third process for making the transformed response message available to the requesting entity such that the response message format is a format compatible with the requesting entity.

35. The system of claim 34, wherein the request message is an XML message and the tag identifies a type of XSL conversion to apply to the response message.

36. The system of claim 35, wherein the second process transforms the response message from an XML format to the required format based on the tag.

37. A servlet for processing request messages in an electronic invoice presentment and payment system including a requesting entity and a server interconnected by a network, comprising:

a first servlet, operating within the server, for receiving a WML request message associated with the requesting entity, and converting the WML request message to an XML request message; and

a second servlet, operating within the server, for receiving the converted XML request message from first servlet and processing the XML request message such that a tag included within the XML request message is used to transform an XML response message to a WML response message.

38. A method for processing requests for information in an electronic invoice presentment and payment system including at least a requesting entity and a server system interconnected by a network, the method comprising:

receiving a request, from the requesting entity, configured in a first format at a web server associated with the server system,

generating a request message formatted in XML, wherein the request message includes a tag that indicates a response message format associated with the requesting entity;

processing the request message to produce response data;

converting the response data into XML format;

analyzing the tag to determine a type of XSL conversion to apply to the response message;

transforming the XML response message into the response message format based on the analysis; and

making the transformed response message available to the requesting entity.

39. A computer-readable medium including instructions for performing a method, when executed by a processor, for processing requests for information in an electronic invoice

presentment and payment system including at least a requesting entity and a server system interconnected by a network, the method comprising:

receiving a request configured in a first format at the server system, wherein the request includes a tag that indicates a response format associated with the requesting entity;

generating a response associated with the request;

transforming the response to the response format based on the tag; and

making the transformed response available to the requesting entity.

40. The computer-readable medium of claim 39, wherein the first format and the response format are identical.

41. The computer-readable medium of claim 40, wherein the request was initiated by the requesting entity through the network.

42. The computer-readable medium of claim 39, wherein the tag indicates a type of XSL conversion and transforming the format of the response comprises:

using the type of XSL conversion indicated in the tag to convert the response to the first format.

43. The computer-readable medium of claim 39, wherein receiving a request comprises:

making request types available to the requesting entity;

receiving a selection of a request type from the requesting entity; and

generating the request configured in the first format based on the selection and the requesting entity.

44. The computer-readable medium of claim 39, wherein receiving a request comprises:

determining whether the request is in XML format; and

converting the request to a particular XML format in the event the request is not in XML format.

45. The computer-readable medium of claim 44, wherein the particular XML format is based on a type of the request.

46. The computer-readable medium of claim 45, wherein the requesting entity is associated a user and the type of the request includes at least one of a request for billing summary information, a request for authorization of the user, a request for user account information, a request to make a payment associated with an invoice, a request to view user profile information, and a request to edit user profile information.

47. The computer-readable medium of claim 39, wherein generating a response comprises:

requesting information from a process operated by the server system based on the request;

receiving the information from the process; and

generating the response based on the information in XML format.

48. The computer-readable medium of claim 47, wherein transforming the format of the response comprises:

transforming the response from the XML format to the first format based on the analysis.

49. A computer-readable medium including instructions for performing a method, when executed by a processor, for processing a response message associated with a request message corresponding to a requesting entity in an electronic invoice presentment and payment system, the method comprising:

receiving a response message in a first format;

converting the response message to a second format based on an indicator included in the request message; and

sending the converted response message to the requesting entity such that the second format is the same format as that of the request message.

50. The computer-readable medium of claim 49, wherein the indicator identifies a type of XSL conversion that is to be applied to the response message.

51. The computer-readable medium of claim 49, wherein the request message is formatted in XML and the indicator is a tag embedded in the request message.

52. The computer-readable medium of claim 51, wherein the requesting entity initiates the request message by accessing a resource through a request formatted in the second format.

53. The computer-readable medium of claim 51, wherein the requesting entity initiated the request message by accessing a resource in the second format, and wherein the second format is not formatted in XML.

54. A computer-readable medium including instructions for performing a method, when executed by a processor, for processing request messages corresponding to a requesting entity, the method performed by a servlet operating within an electronic invoice presentment and payment server comprising:

receiving a request message in a first format;

validating the request message based on the first format;

parsing the validated request message;

providing the parsed request message to a server process based on a type of the request message;

receiving response data associated with the request message and converting the response data into a response message;

determining a response format for the response message based on an indicator included in the request message; and

converting the response message to the response format based on the determination.

55. The computer-readable medium of claim 54, wherein the first format is XML and validating the request message comprises:

validating the XML request message against a DTD.

56. The computer-readable medium of claim 54, wherein the first format is XML and the indicator is a tag included within the XML request message.

57. The computer-readable medium of claim 56, wherein the tag indicates a type of XSL conversion to be applied to the response message and converting the response message comprises:

converting the response message to the response format based on the tag.

58. The computer-readable medium of claim 56, wherein the response format is a format associated with a requesting entity that initiated the request message.

59. A computer-readable medium including instructions for performing a method, when executed by a processor, for processing requests for information in an electronic invoice presentment and payment system including at least a requesting entity and a server system interconnected by a network, the method comprising:

receiving a request, from the requesting entity, configured in a first format at a web server associated with the server system,

generating a request message formatted in XML, wherein the request message includes a tag that indicates a response message format associated with the requesting entity;

processing the request message to produce response data;
converting the response data into XML format;
analyzing the tag to determine a type of XSL conversion to apply to the response message;
transforming the XML response message into the response message format based on the analysis; and
making the transformed response message available to the requesting entity.

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